April 23, 1956

Dr. C. F. Ford
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Dear Dr. Ford:

Your recent remarkable contribution in Nature (for March 10) prompts me to ask the favor of a reprint, and the further courtesy of keeping me in mind for your further development of this topic in later publications.

I have been quite suspicious of transduction as accounting for the radio-protection results, and equally so for the Paschkis et al expts. on transfer of tumors by "chromatin", but had not forseen such an elegant approach as you have developed. It is still an open question, isn't it nevertheless, whether units less than an intact cell (nuclei?, perhaps even free chromosomes) might also participate in these transfers. Perhaps none of the published work is strong enough to warrant any suspicion that intact cells are still present in the various preparations. I hope that workers with somatic cells will still be on the lookout for any residual likely possibilities of genetic interactions of grafts and their hosts.

There is one experiment that may be technically too difficult, but I hope you may already have had in mind. In grafting rat cells into mouse hosts, you have taken advantage of the suppression of the mouse antibody response, which may or may not be complete and irreversible; in other situations, at any rate, an acquired tolerance may be postulated without complete replacement of the host Antibody-Forming-System. It is therefore plausible that the AFS cells of the host have been modified. Could you demonstrate a similar modification of the cells of the graft? This might be detected in the inability of these cells to be transplanted back to the host of origin, * if the graft cells have acquired histo-incompatibility factors from their temporary host. I have left out a number of technical details, but I think the question is a fair one. I have in mind, back of this, the work of Barrett & Deringer, and Hauschka, and Koprowski on the modification of grafts by passage in heterologous hosts under other conditions; there would be real advantages in maintaining cytogenetic control of the passage cells.

*or their ability to pass in unirradiated mice.

Yours sincerely,

Joshua Lederberg
Professor of Genetics